

CROSS TALK

QUARTERLY BULLETIN

FOUNDATION FOR CROSS-CONNECTION CONTROL
AND HYDRAULIC RESEARCH
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The List

The "List of Approved Backflow Prevention Assemblies" has taken on a new look. You will notice in the latest edition of the List that the List has a new cover sheet and on each page is printed "Exclusively for Foundation Membership Use." This has been changed in order to deter the unauthorized use of the List. The List has also been copyrighted by the University and, therefore, protected by law from duplication. It is, however, acceptable for the Member to copy the List for internal use. For example, if the Member agency is requiring a customer to install an Approved assembly, they may give a copy of the List to the customer to facilitate a choice of an Approved assembly.

The List is provided as a service to

the Members of the Foundation. Many Members specify that the assemblies to be installed in their area of jurisdiction must be on the Foundation's List of Approved Backflow Prevention Assemblies. Other Members, on the other hand, start off with the Foundation's List and make alterations as they see fit for their particular needs. In either case, the Members have the advantage of utilizing the Foundation's List without having the expense of conducting the extensive laboratory and field evaluations on each size and model of assembly placed on their list. With the liability situation what it is today, no agency wants to approve an assembly for installation which has not been stringently tested and proven in both the laboratory and in the field.

New Members

The following agencies have joined the ranks of Membership in the Foundation in the second quarter of 1987. The Foundation would like to congratulate these agencies on their Membership and their desire to provide a healthier environment. Welcome to the Membership Program!!

Academy Plumbing, CA
City of Albuquerque, NM
Andre Cote Co., CA
Backflow Specialty, CA
Bermad Irrigation Controls, Inc., CA
City of Burbank, CA
Crescenta Valley County Water District, CA
FRS Sirrinc, Inc., NC
Merokee Water & Sanitation District, CO
Edmonton Water and Sanitation, Alberta,
Canada
Florida Keys Aqueduct Authority, FL
Frank Z. Hockett Company, Inc. AZ

Ivanhoe Public Utilities District, CA
J. R. Technical Service Inc., KY
Las Vegas Valley Water District, NV
Medicine Hat College, Alberta, Canada
Ramona Municipal Water District, CA
Robert D. Terborg Co., CA
County of Sacramento, Office of
Environmental Health, CA
City of San Fernando, CA
St. Paul TVI, MN
Thomas J. O'Brien Co., IL
City of Vacaville, CA
City of Woodland, CA

Are You Certified?

Are you a certified backflow prevention assembly tester? Many students having been trained through the USC 5-day Short Course consider themselves to be certified testers. The fact is that certification is a function of the local certifying authority. This may be either the local water agency, the county health department, or a state agency.

The USC Short Course trains the student in the intricacies of testing backflow prevention assemblies. This includes the double check valve assembly, the reduced pressure backflow prevention assembly, and the pressure type vacuum breaker assembly. The Foundation teaches the testing procedures set forth in the current edition of the **MANUAL OF CROSS-CONNECTION CONTROL**, now in its 7th edition. Therefore, after successful completion of the USC Short Course, the student should be able to go to the certifying agency in their area, take their test(s) and become certified. But, a student does not become automatically certified after successful completion of the USC Short Course. The jurisdiction in

which the tester desires to work must be consulted for local requirements to become a Certified Backflow Prevention Assembly Tester.

The Certificate of Completion which the student receives after successfully completing the USC Short Course only states the student's name and date of the training course. There is no "number" issued to the student.

It is, however, possible to become Certified through the American Water Works Association (AWWA), California/Nevada Section's Voluntary Certification Program. On the final day of the Course there is a representative from the AWWA CA/NV Section present to help proctor the written and practical examinations. These exams are accepted as official exams of the AWWA CA/NV section Voluntary Certification Program. For more information on the USC Short Course which is offered several times each year in Los Angeles, and around the nation please contact the Foundation office at (213) 743-2032.

Is the Assembly Approved?

The Foundation receives calls regularly inquiring as to the status of a particular assembly. Sometimes these questions are regarding a unit which is undergoing evaluation in the lab or in the field. The Foundation will not give out information regarding a "proposed" date for Approval since a problem may arise during any part of the evaluation process. The assemblies are considered NOT APPROVED until the successful completion of both the Laboratory and Field Evaluation phases of the Approval Program, which includes the final inspection in the field to determine if any problems may have occurred over the course of the evaluation period which would render the assembly unsuitable for backflow prevention. It is, therefore, impossible to predict when a unit will become Approved before it has actually completed the entire evaluation process. The assembly is then placed immediately on the List of Approved

Backflow Prevention Assemblies, and a new List is sent to each Foundation Member.

The question has also arisen as to whether or not an assembly maintains its Approval if modifications have been made to the unit. The Foundation's Approval is granted for each model and size of backflow prevention assembly. If any changes are made to the assembly by the manufacturer, it must be resubmitted to the Foundation for testing. If modifications are made without the Foundation's knowledge and approval that particular assembly is no longer considered Approved. The Foundation will not grant variances for changes made to an individual unit, only those modifications made by the manufacturer which have been tested and Approved by the Foundation against the specifications set forth in the **current MANUAL OF CROSS-CONNECTION CONTROL** will be accepted.

Field Testing: The Pressure Vacuum Breaker

Pressure vacuum breakers (PVBs) are commonly used to protect against back-siphonage of a contaminant (i.e., health hazard). They are very popular because they can be used on irrigation systems (as long as there is no possibility for back-pressure) and they are relatively inexpensive. However, there is a problem that arises when PVBs are installed. In many locations they are never tested. This can be even worse than never installing the PVB. Once the unit is installed one has the sense of being protected, yet if the unit is never tested it may not be providing any protection, only a false sense of security. It is very important that all PVBs are tested at least annually just as other backflow preventers. They must not only be tested, but they must be tested correctly.

One of the most common mistakes made when testing a PVB is to test the assembly with the differential gauge at a different elevation than the PVB itself, thus causing a significant false reading on the gauge. The reason that a false reading may be found is that the weight of the water in the hose creates pressure against the gauge, in addition to the pressure being read at the test cock. A water column of just $27\frac{3}{4}$ " of water is equivalent to one pound per square inch at the base of the water column (see figure 1, below.) For example, if a PVB is installed three feet above the ground and the differential gauge is placed on the ground to conduct the

test, the gauge should read the difference in pressure from the testcock to which it is attached and the atmospheric pressure at ground level. However, the weight of the water in the hose will create extra pressure on the high side of the gauge in addition to the pressure coming from the test cock (see figure 2.) Thirty-six inches of water will create a pressure of 1.29 psi (pounds per square inch). So, in testing for the opening point of the check valve, one could read on the gauge 1.29 psid, yet in reality the check may not be holding at all.

To protect against obtaining false readings, the tester should do one of two things. First, the gauge can be held at the same level as the PVB being tested. Then there will be no difference in elevations between the gauge and the PVB to create a false reading. Another possibility, which many testers prefer, is to fill the low side hose of the gauge with water and place the end of this hose equal in height with the high side hose (see figure 3.) Since the gauge is reading differential pressure, the pressures built up in both of the hoses because of the weight of the water in the hoses will negate one another, thus leaving the actual differential pressure reading.

Should you have any questions regarding the testing method, please contact a member of the Foundation's Engineering Staff.

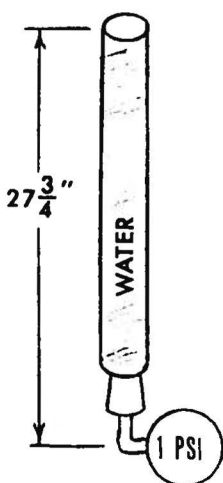


FIG. 1

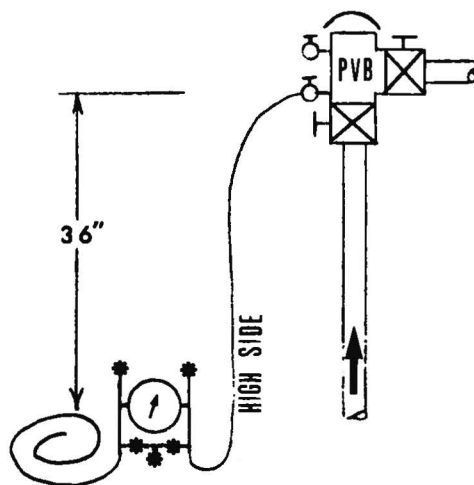


FIG. 2

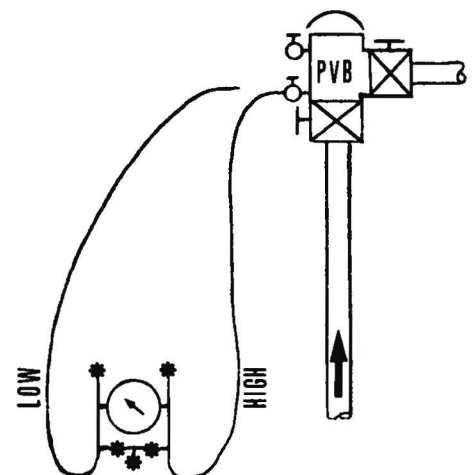


FIG. 3

California's Title 17

Title 17 of the California Administrative Code has been modified as of July 1987. There are several points in the new Title 17 which will be of interest to those involved in the prevention of backflow. The new code states that the water supplier's cross-connection control program shall include but not be limited to the following:

1. The adoption of operating rules or ordinances to implement the cross-connection control program.
2. The conducting of surveys to identify places where cross-connections are likely to exist.
3. The provision of backflow protection at the user's connection or within the user's premises or both.
4. The provision of at least one person trained in cross-connection control to carry out the cross-connection control program.
5. The establishment of a procedure or

system for testing backflow preventers.

6. The maintenance of records of locations, tests, and repairs of backflow preventers.

Falling under section 5 above is a stipulation that a list of approved backflow preventers and a list of certified testers should be established. It is also stated that "Backflow preventers required by this chapter shall have passed laboratory and field evaluation tests performed by a recognized testing organization which has demonstrated their competency to perform such tests to the Department." This requirement is satisfied by the Foundation's "List of Approved Backflow Prevention Assemblies", as the Foundation not only requires stringent laboratory testing, but also a field evaluation in order for assemblies to be placed on the List and be considered Approved.

More information regarding California's Title 17 will be available from the California Department of Health Services this summer.

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